MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2025-26
Module Code	2485
Module Title	Thinking Like a Health Data Scientist
Module Organiser(s)	Helen Strongman and Judith Lieber
Faculty	Epidemiology & Population Health
FHEQ Level	Level 7
Credit Value	**CATS:** 10 **ECTS:** 5
HECoS Code	100994
Term of Delivery	Term 1
Mode of Delivery	Where specific teaching methods (e.g. lectures, workshops, panel discussions) are noted in this module specification these will be delivered using a blended learning approach using either face-to-face or through an online platform. There will be a combination of live and interactive activities (synchronous learning) as well as recorded or self-directed study (asynchronous learning).
Mode of Study	Full time
Language of Study	English
Pre-Requisites	None, over and above the pre-requisites for the programme MSc Health Data Science
Accreditation by Professional Statutory and Regulatory Body	None
Module Cap (indicative number of students)	As per the number of student registrations on the MSc in Health Data Science.
Target Audience	This module is compulsory for the MSc in Health Data Science.
Module Description	The "Thinking Like A Health Data Scientist" module covers key considerations and decisions that need to be made to use a wide range of data sources, including ethics, information governance and data quality. This module will be brought to

	life by experienced data scientists through lectures, panel discussions and workshops.
Duration	10 x 0.5 day sessions
Timetabling slot	Term 1
Last Revised (e.g. year changes approved)	July 2023

Programme(s) This module is linked to the following programme(s)	**Status**
MSc Health Data Science	Compulsory

Module Aim and Intended Learning Outcomes

Overall aim of the module
The overall module aim is to: • provide the foundational knowledge and understanding of health data science to allow students to develop: (i) a sense of the emerging health data landscape, and (ii) high professional standards as a working health data scientist • This includes the ability to understand complex problems, identify and evaluate solutions, and come to a reasoned conclusion

Module Intended Learning Outcomes
Upon successful completion of the module a student will be able to: 1. contrast a range of applications of health data science; 2. examine the context in which key sources of health data are collected; 3. critically evaluate the implications of the data collection context for the storage, access, quality, and analysis of the data; 4. appraise the ethical implications of a given study design within a health data science project; 5. examine key information governance, and security issues relevant to health data science.

Indicative Syllabus

Session Content
The module is expected to cover the following topics: • "Wicked problems" in health data science, our identities as health data scientists, and collaborative decision making in the discipline; • data sources and systems relevant to health data science in the UK and abroad;

Session Content
• ethical issues and processes, with a focus on current controversies relevant to Health Data Science (including data ownership, consent, ethics of algorithms); • information governance, anonymization, privacy, and relevant regulatory frameworks (e.g. GDPR) • data quality issues in routinely collected data (coding/misclassification, linkage, missing data) • examples of health data science in practice

Teaching and Learning

Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	22	22
Directed self-study	30	30
Self-directed learning	33	33
Assessment, review and revision	15	15
Total	**100**	**100**

Student contact time refers to the tutor-mediated time allocated to teaching, provision of guidance and feedback to students. This time includes activities that take place in face-to-face contexts such as lectures, seminars, demonstrations, tutorials, supervised laboratory workshops, practical classes, project supervision as well as where tutors are available for one-to-one discussions and interaction by email. Student contact time also includes tutor-mediated activities that take place in online environments, which may be synchronous (using real-time digital tools such as Zoom or Blackboard Collaborate Ultra) or asynchronous (using digital tools such as tutor-moderated discussion forums or blogs often delivered through the School's virtual learning environment, Moodle).

The division of notional learning hours listed above is indicative and is designed to inform students as to the relative split between interactive (online or on-campus) and self-directed study.

Teaching and Learning Strategy
A variety of teaching methods will be used, including traditional didactic lectures, panel debate, problem solving group work, and self-directed learning.

Assessment

Assessment Strategy
The assessment for this module has been designed to measure student learning against the module intended learning outcomes (ILOs) as listed above. Formative assessment methods are used to measure students' progress. The grade for summative assessment(s) only will go towards the overall award GPA. The assessment for this module in term 1 will be online. Formative assessment will include two in-module open book MCQ tests on information governance and ethics. The MCQ tests will be untimed and multiple attempts will be permitted. At the end of the module for summative assessment, students will be assessed through a 1000 word written assignment which includes a Data Protection Impact Assessment table of no more than one A4 page in length (100% of the module GPA).

Summative Assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
Coursework	Maximum 1000 words and one table	100	1- 5

Resitting assessment
Resits will accord with Chapter 8a of the LSHTM Academic Manual. For resits of the essay component, students will be offered the opportunity to revise and resubmit their original submission.

Resources

Indicative reading list

Deeny SR, Steventon A. Making sense of the shadows: priorities for creating a learning healthcare system based on routinely collected data. BMJ Quality & Safety 2015;24:505-515.

Goldacre, B. (2008) Bad Science. London: Fourth Estate.

Other resources

Information Commissioner's Office website https://ico.org.uk/

Module information, including timetables, lecture notes, practical instructions and key literature for each session will be made available via the Virtual Learning Environment (Moodle).

Teaching for Disabilities and Learning Differences

This module will seek to benefit from technology enhanced learning resources to meet the needs of students with disabilities or learning differences. This will include:
- use of Panopto to record lectures for which this is feasible in the booked room (with opt-out offered to external speakers) in line with the LSHTM's policy on Lecture Recording;
- requesting lecturers to follow the LSHTM Technology Enhanced Learning guidance on making PowerPoint presentations inclusive and to use the built-in accessibility checker;
- requesting lecturers to provide slides and/or handouts at least a week prior to lectures/seminars and making these available in advance; and
- collecting and responding to student feedback on the module organisation and materials.

The module-specific site on Moodle provides students with access to lecture notes or copies of the slides used during the lecture prior to the lecture (in pdf format). All lectures are recorded and made available on Moodle as quickly as possible. All materials posted up on Moodle areas, including computer-based sessions, have been made accessible where possible.

The LSHTM Moodle has been made accessible to the widest possible audience, using a VLE that allows for up to 300% zoom, permits navigation via keyboard and use of speech recognition software, and that allows listening through a screen reader. All students have access to "SensusAccess" software which allows conversion of files into alternative formats.

For students who require learning or assessment adjustments and support this can be arranged through the Student Support Services – details and how to request support can be found on the LSHTM Disability Support pages.